

FIG. 1

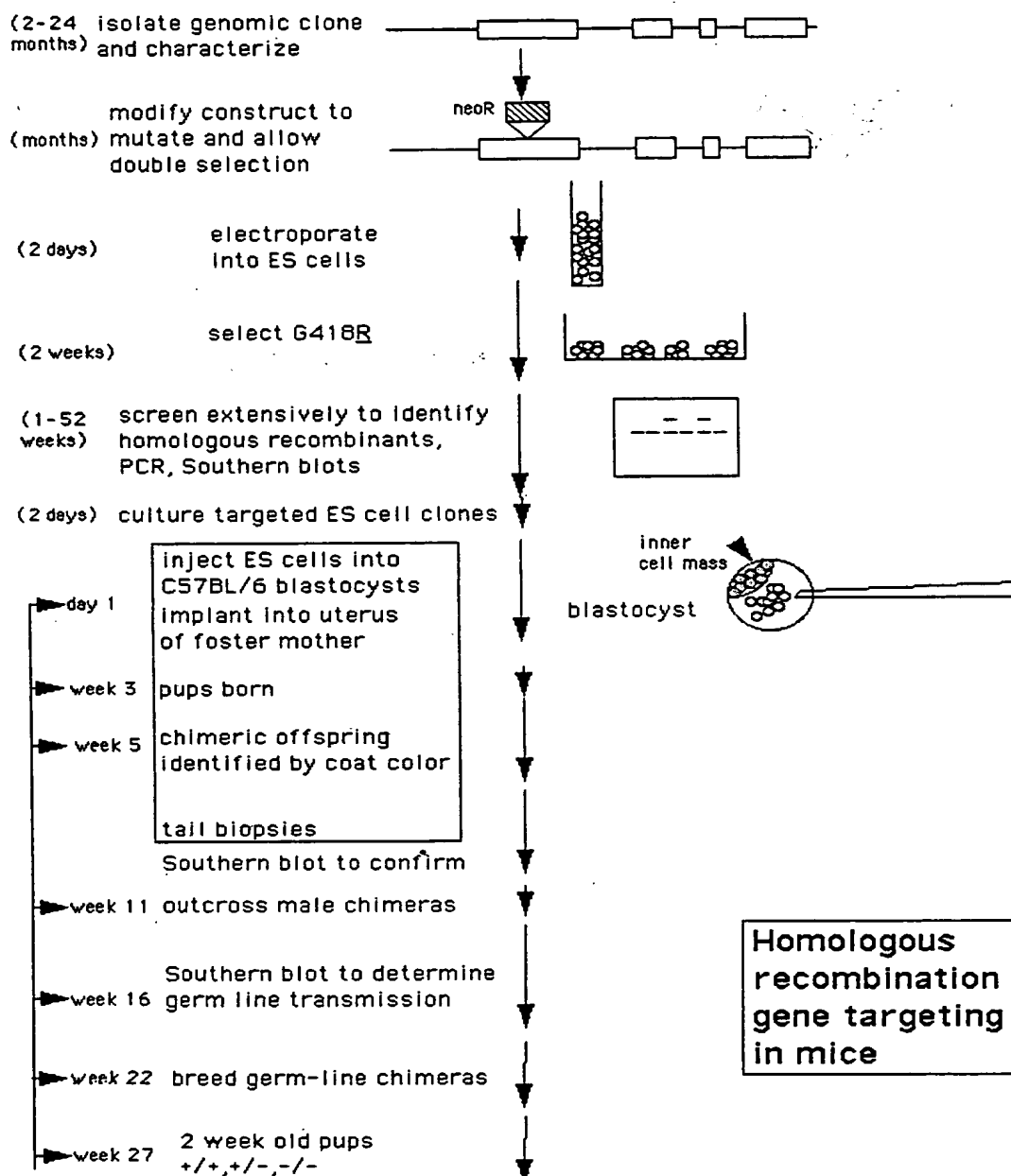


FIG. 2

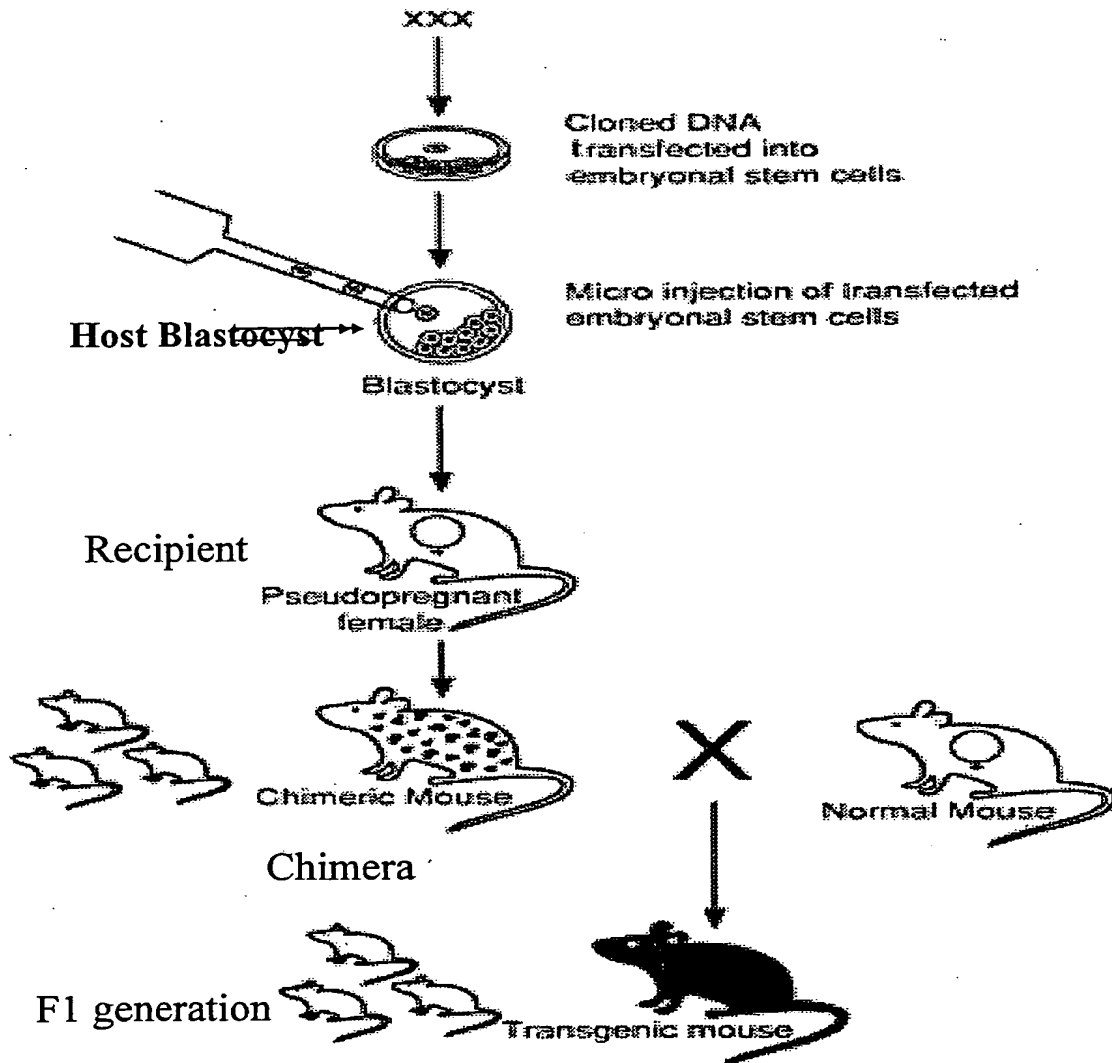


FIG. 3

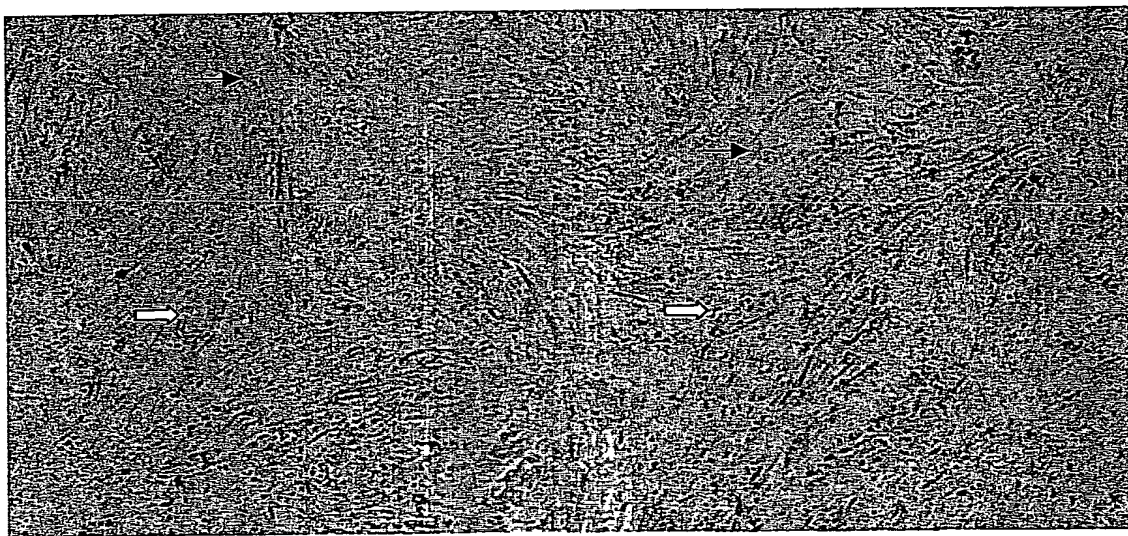


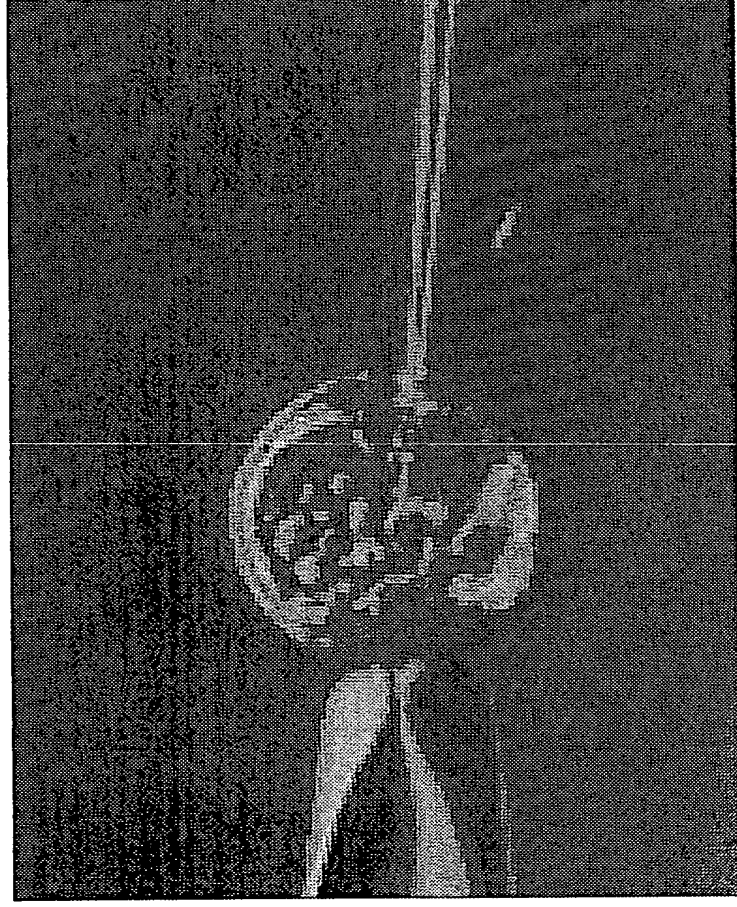
FIG. 4

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FIG. 5

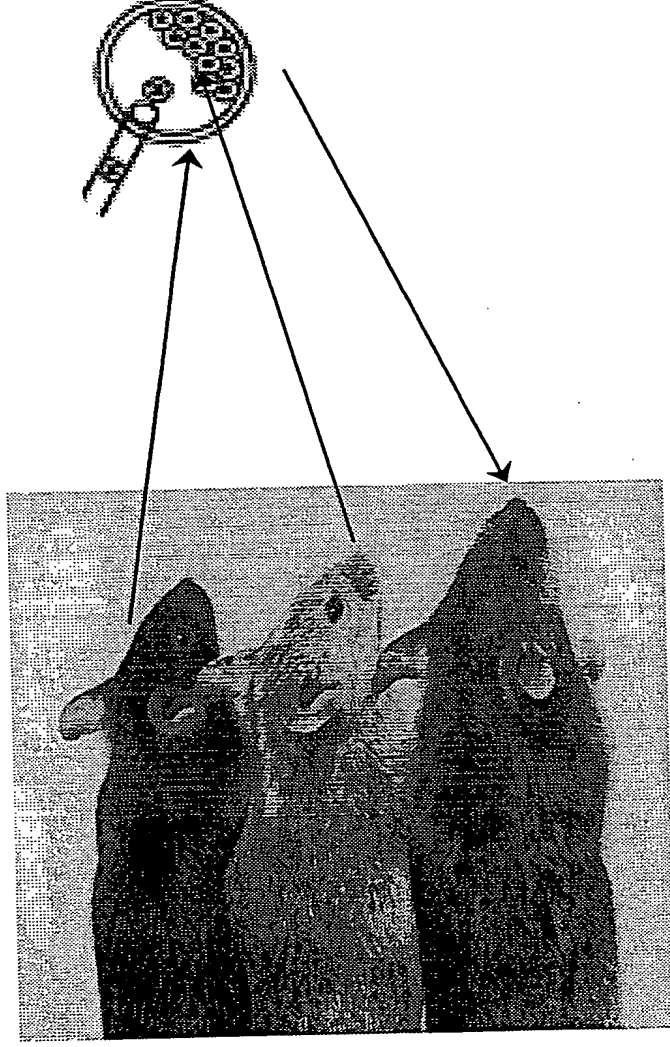
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ES cells are injected into blastocysts



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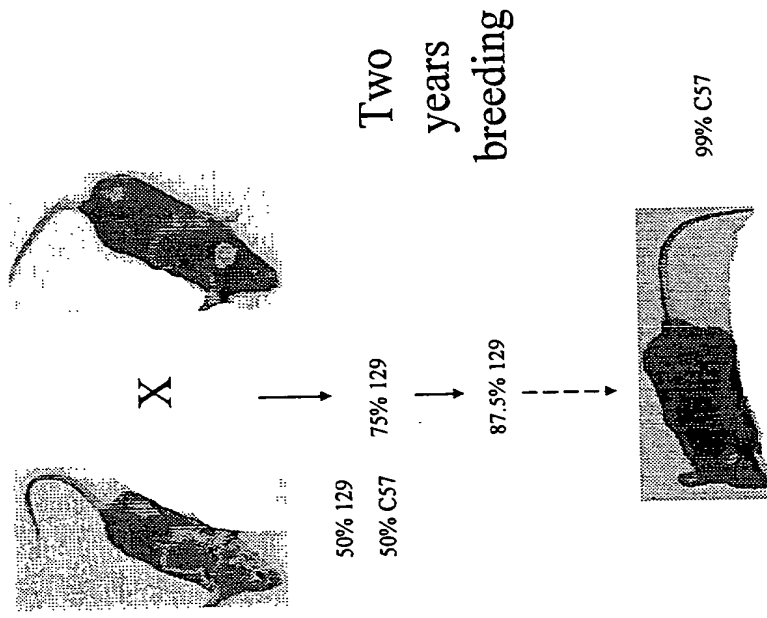
Coat Color and Chimerism



“Agouti into black”

FIG. 6

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Pure
background

FIG. 7

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“Black into black”

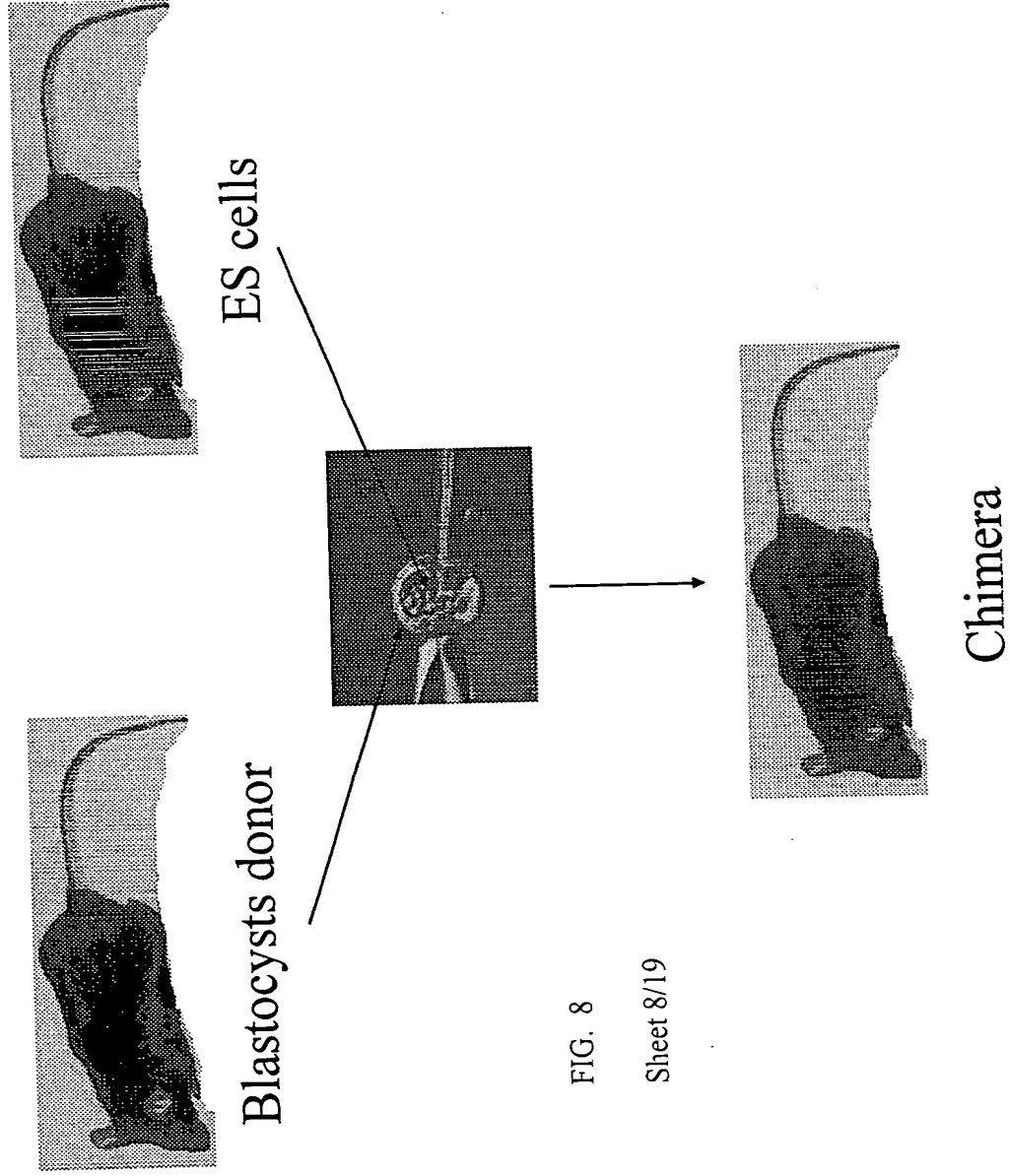


FIG. 8

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Summary of germ line transmission of C57 BL/6J-derived ES cell lines

#		# of PCR		#		# of		Germ line	
Construct	Blastocysts Injected	Host Strain	Total # Born	Tested	Chimeras	# of pups born	neo-pups	Transmitters	Transmitters
GFP	20	C57 BL/6J	8	5	1	34	7	1	1
p53	20	C57 BL/6J	18	5	2	16	4	2	2
p53+GFP	20	C57 BL/6J	15	7	1	19	13	1	1

FIG. 9

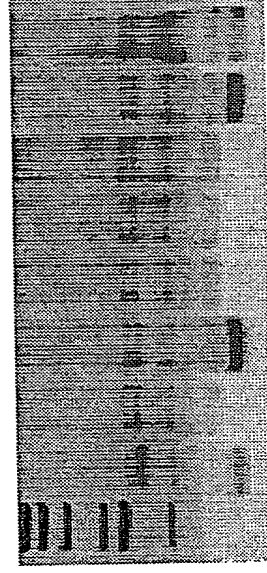
“Black into black”

FIG. 10

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PCR identification of founders

1 2 3 4 5 6 7 8 9



* *

PCR identification. Lane 1, DNA ladder; lane 2, positive control (known neomycin positive DNA); lane 3, negative control (wild type DNA); lane 4-7, GFP founders 2-5; lane 8 and 9, p53 founders 1 and 2.

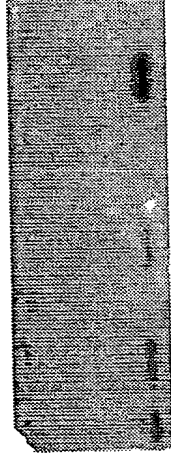
“Black into black”

FIG. 11

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Southern blotting of founders and their offsprings

1 2 3 4 5 6 7 8



* *

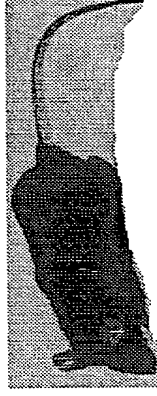
Southern blotting: Lane 1-5, P53 founder 1-5; lane 6-8, p53 F1
offspring 1-3.

“Black into black”

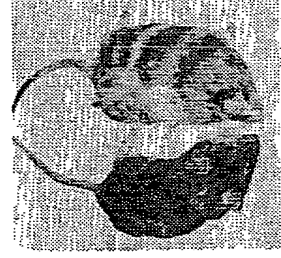
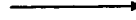
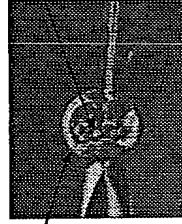
“Black into white”



White blastocysts donor



Black ES cells



Chimeras

FIG. 12

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Summary of germ line transmission of C57 BL/6J-
derived ES cell lines

#		# of PCR		#		# of pups		# of		# of	
Blastocysts		Host		Total		Born		Rep+Pups		Transmitters	
Injected		Strain		Born		Born		Rep+Pups		Transmitters	
3 Albino C57				3		2		16		11	
p53										2	

FIG. 13

“Black into white”

Chimeras from IC1 ES cells injected
into albino C57 BL/6J blastocysts

ES cells

Chimeras

Blastocysts
donor



FIG. 14

“Black into white”

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“Black into black”

Genetically modified ES cells (black)



Injected into C57BL/6 (black)



Germline transmission

Advantages

- Pure background
- High efficiency (100% germline transmission)
- Reduction in time and cost

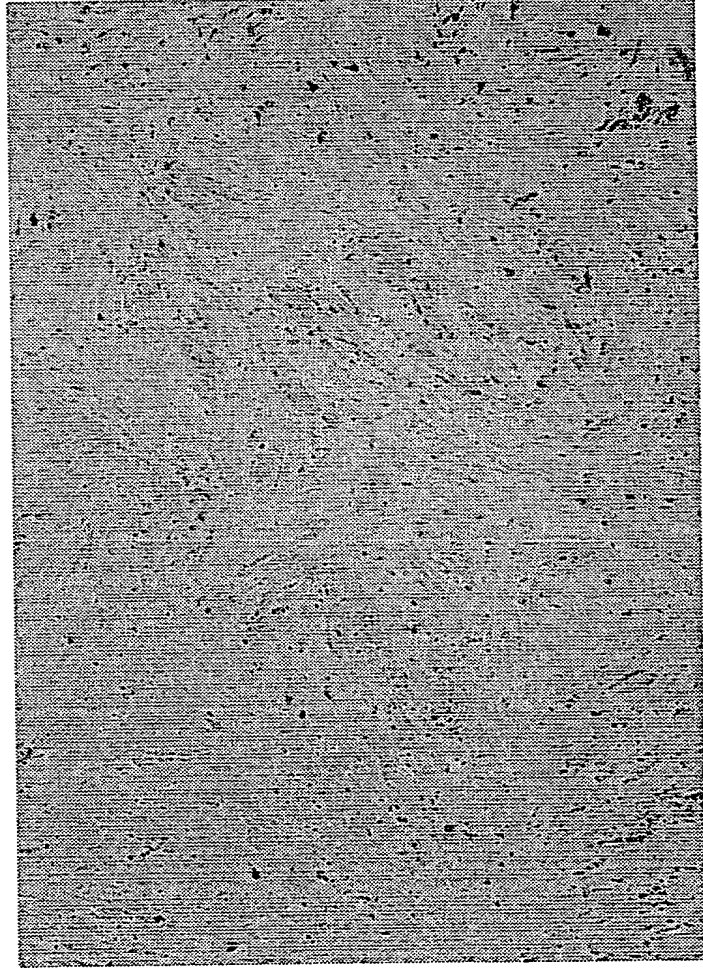
FIG. 15

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FIG. 16

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C57BL/6J-*Tyrc-2J* -derived ES cell lines



“White into black”

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FIG. 17

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“White into black”

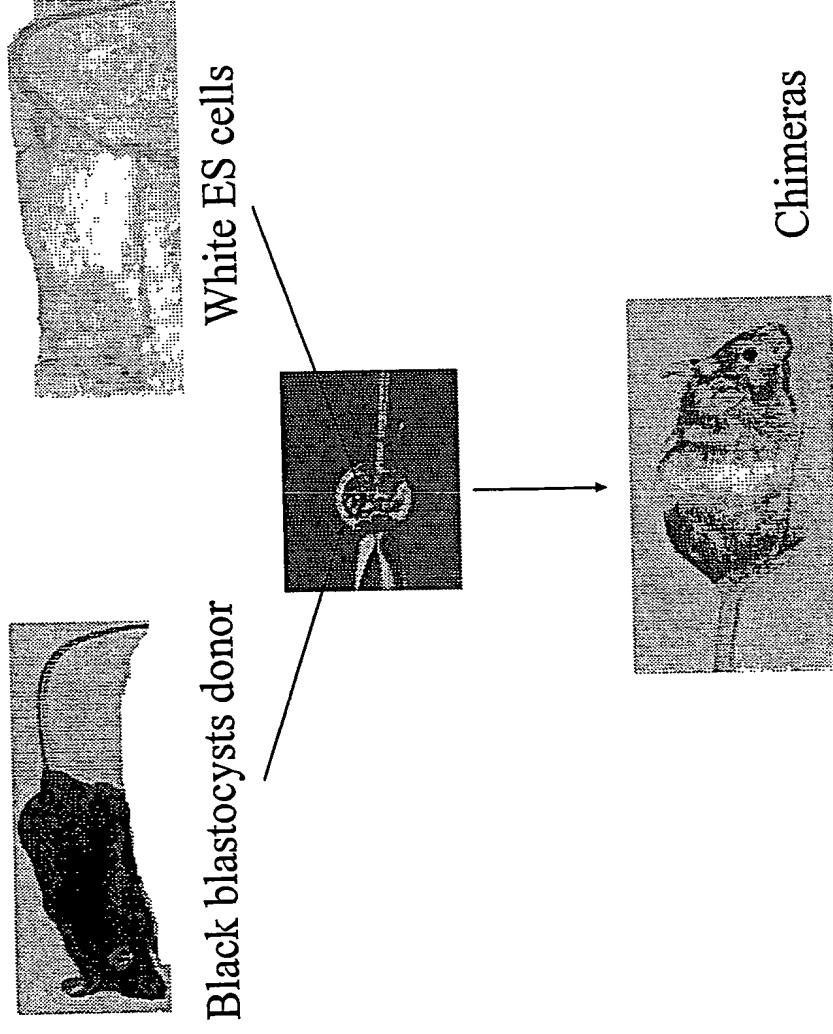


FIG. 18

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Results of germline transmission of C57BL/6J-*Tyr^{c-2J}* -derived ES cell lines

Cell lines	# Elastoysts Injected	Host Strain	Total # Born	# Chimeras	# Chimeras tested	Germline Transmitters
IAC1	52	C57BL/6J	18	5	2	1
IAC2	24	C57BL/6J	15	5	1	
IAC5	20	C57BL/6J	8	2		

**A chimera produced from the injection of
albino C57 ES cells into black C57 blastocysts**

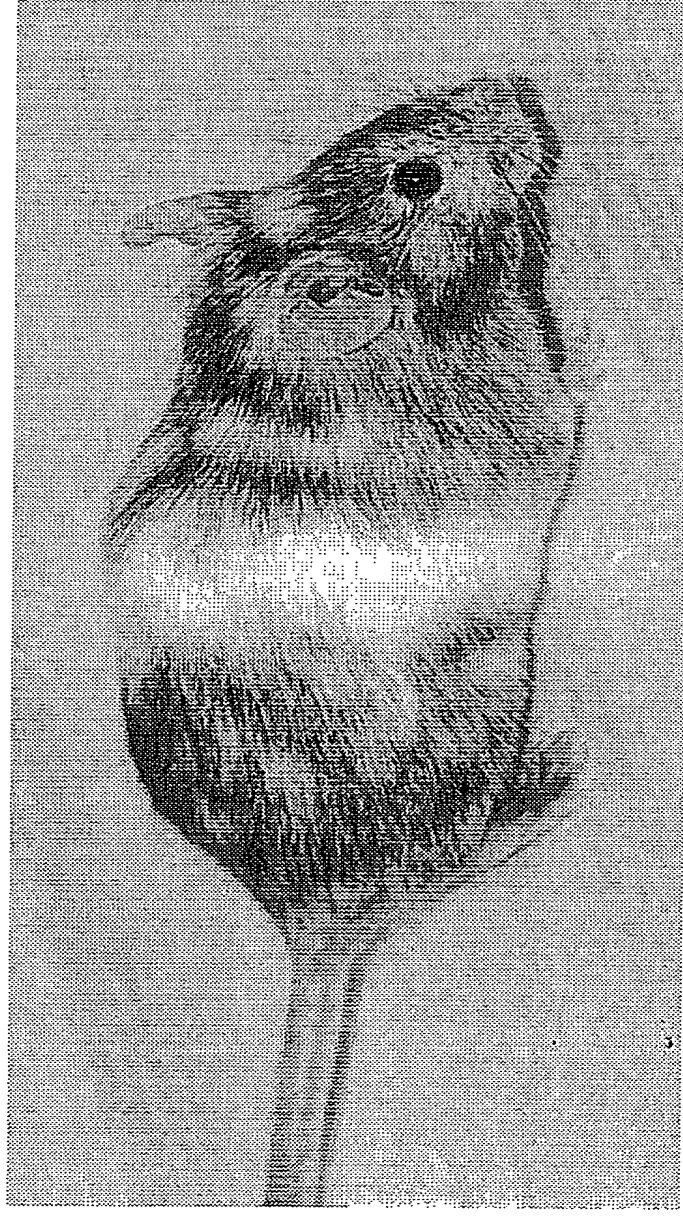


FIG. 19

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